ASRock Rack

OPEN
Industry Standard, Flexible Architecture

GREEN
Less Heat, Less Power Consumption

STABLE
Robust Design, Quality Parts

Stable and
Reliable Solution

Barebone

2U12L6SC

User Manual

Version 1.0
Published August 2013
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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

CALIFORNIA, USA ONLY

The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.
"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

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Important Safety Instructions

Pay close attention to the following safety instructions before performing any of the operation. Basic safety precautions should be followed to protect yourself from harm and the product from damage:

- Operation of the product should be carried out by suitably trained, qualified, and certified personnel only to avoid risk of injury from electrical shock or energy hazard.
- Disconnect the power cord from the wall outlet when installing or removing main system components, such as the motherboard and power supply unit.
- Place the system on a stable and flat surface.
- Use extreme caution when working with high-voltage components.
- When handling parts, use a grounded wrist strap designed to prevent static discharge.
- Keep the area around the system clean and clutter-free.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags when not in use.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.

Contact Information

If you need to contact ASRockRack or want to know more about ASRockRack, you're welcome to visit ASRockRack's website at www.ASRockRack.com; or you may contact your dealer for further information.

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Chapter 1 Introduction

Thank you for purchasing 2U12L6SC, a reliable barebone system produced under ASRockRack's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRockRack's commitment to quality and endurance.

Because the hardware specifications might be updated, the content of this documentation will be subject to change without notice. In case any modifications of this documentation occur, the updated version will be available on ASRockRack's website without further notice. If you require technical support related to this product, please visit our website for specific information about the model you are using.
ASRockRack's Website: www.ASRockRack.com

The illustrations shown in this manual are examples only, the actual system may differ slightly .

1.1 Package Contents

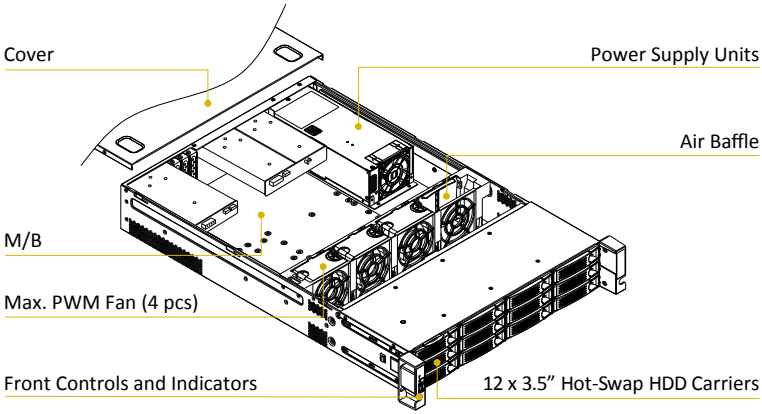
- 2U12L6SC (2U Form Factor)
- Power Supply Unit (pre-installed)
- System Fan (pre-installed)
- HDD Backplanes x 3 (pre-installed)
- Chassis Cables
- Screws x 72 (includes 24ea SFF and 48ea LFF)
- User Manual

If any items are missing or appear damaged, contact your authorized dealer.

Chapter 2 Chassis Overview

This chapter provides diagrams showing the location of important components of the server chassis.

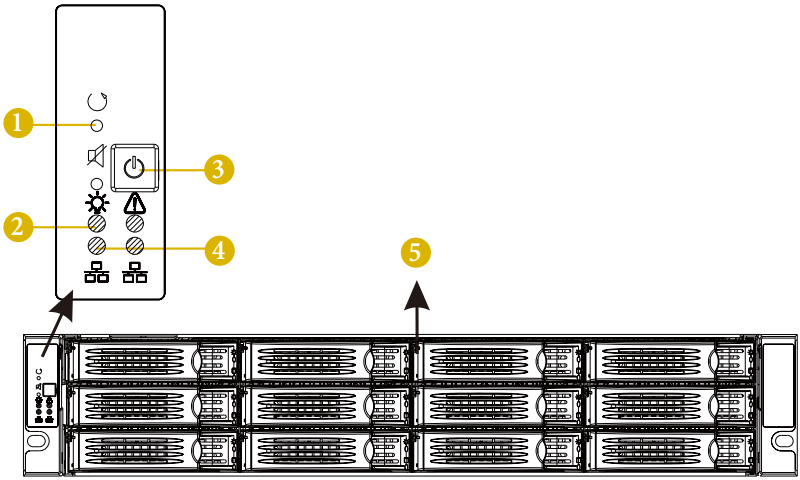
2.1 System Components



English

2.2 System Front View

Front Control Panel



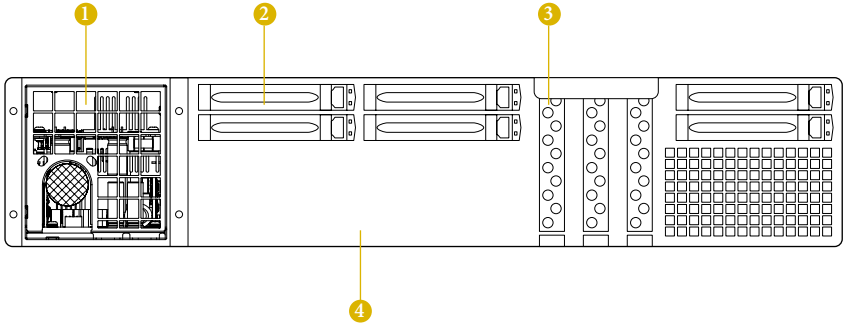
No.	Description
1	System reset button
2	Power LED
3	Power Switch
4	LAN1, LAN2 Activity LED
5	12 x 3.5" Hot-Swap HDD Carriers

Status LED Definitions

Power LED	
Status	**Description**
Blue	System is turned on
Off	Power off

LAN1, LAN2 LED	
Status	**Description**
Green	LAN linked
Off	LAN not linked

2.3 System Rear View



No.	Description
1	Power supply unit
2	6 x 2.5" Hot-Swap HDD Carriers
3	3 x Low Profile PCI Express slots
4	I/O shield (depends on the specification of the motherboard)

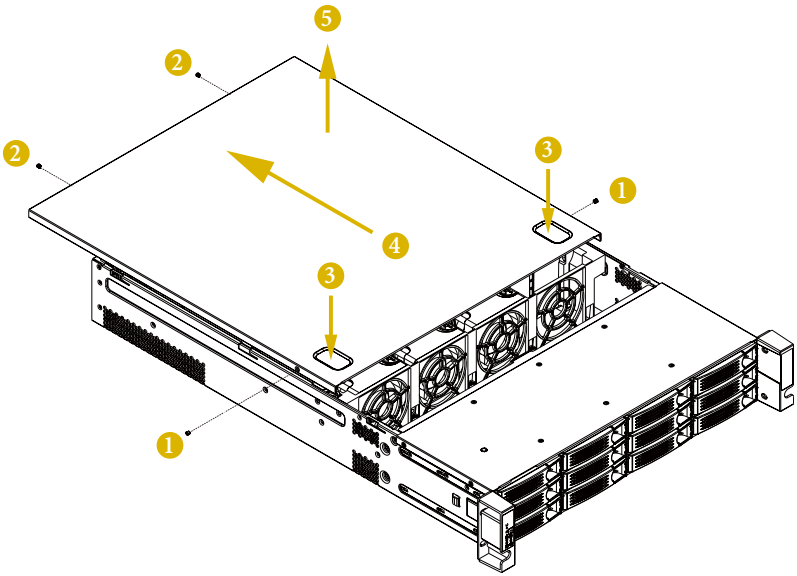
Chapter 3 Hardware Installation and Maintenance

This chapter helps you assemble the chassis and install components.

3.1 Chassis Cover

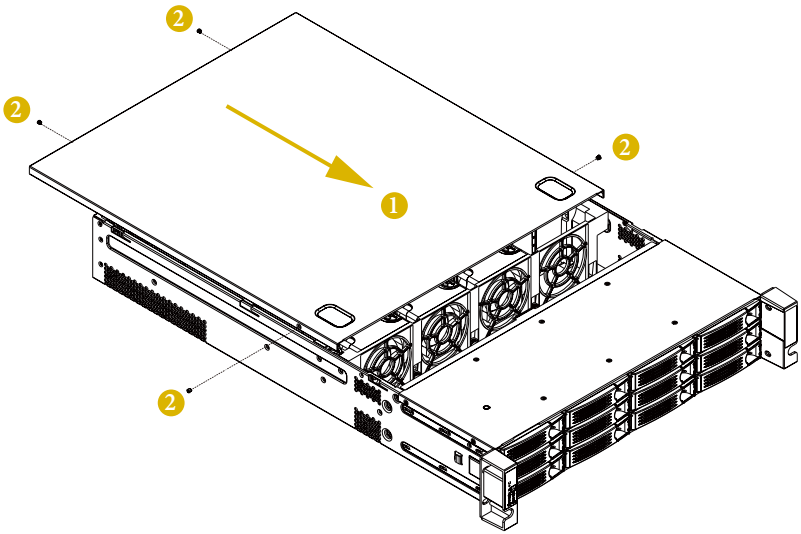
Removing the Chassis Cover

1. Before removing the top cover, power off the server and unplug the power cord.
2. The system must be operated with the chassis top cover installed to ensure proper cooling.



1. Unscrew the two screws from the sides of the chassis cover.
2. Unscrew the two screws from the back side of the chassis cover.
3. Press the release tabs to remove the cover from the locked position. Press both tabs at the same time.
4. Once the top cover is released from the locked position, slide the cover outward.
5. Lift the top cover off the chassis.

Installing the Chassis Cover



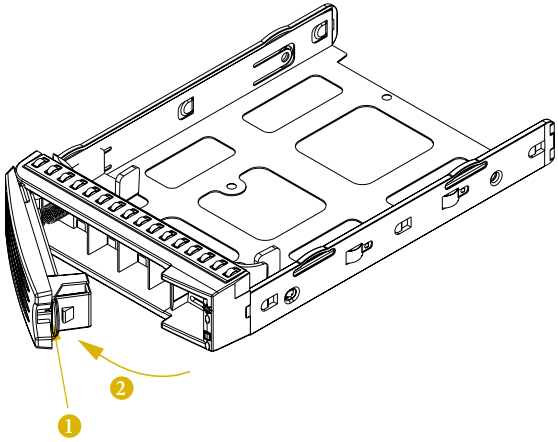
1. Slide the chassis cover toward the front of the chassis.
   Then latch the cover securely to the chassis.
2. Secure the chassis cover with the screws.

3.2 Hard Drives

The 2U12L6SC chassis supports hot-swappable hard drives.

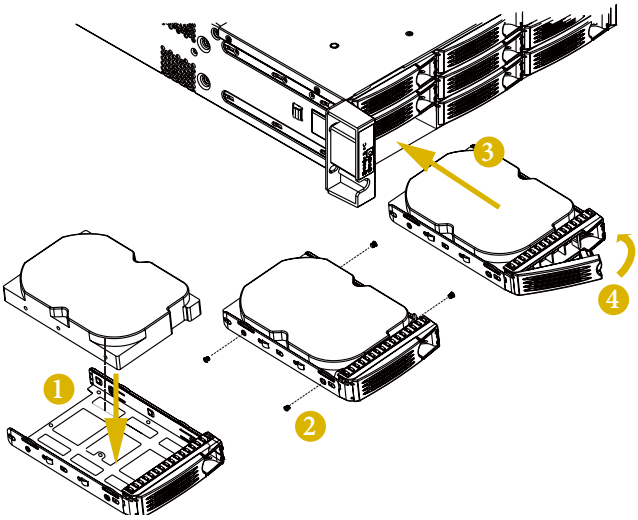
Removing Hard Drive Trays from the Chassis

1. Press the locking lever latch on the drive tray to unlock the retention lever.
2. Rotate the lever out and away from the module bay and pull the hard drive out of the HDD carrier.



Installing a Hard Drive to the Hard Drive Tray

1. Place the HDD into the tray with the printed circuit board side facing down. Carefully align the mounting holes in the hard drive and the tray.
2. Secure the hard drive using the four screws.
3. Slide the drive tray into the HDD bay until the drive is fully seated.
4. Push in the locking lever to lock the HDD tray into place.

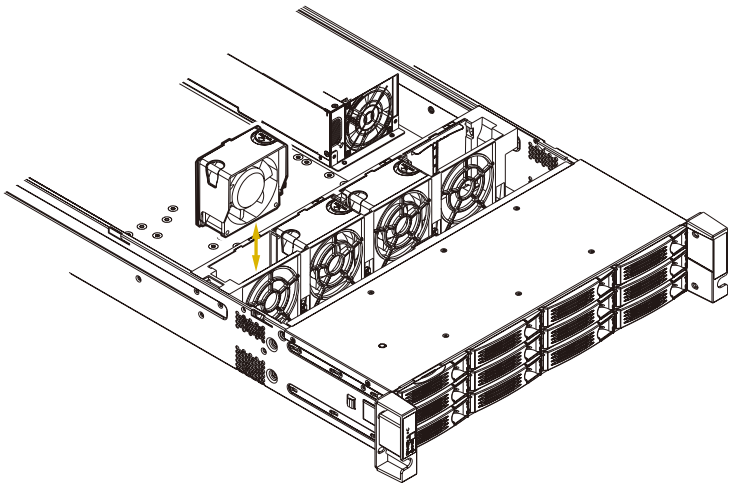


3.3 System Fan

Before replacing the system fan, power off the server and unplug the power cord.

Replacing the System Fan

Hold the clip and put the fan module into fan bar. Push all the way until it clicks into place.

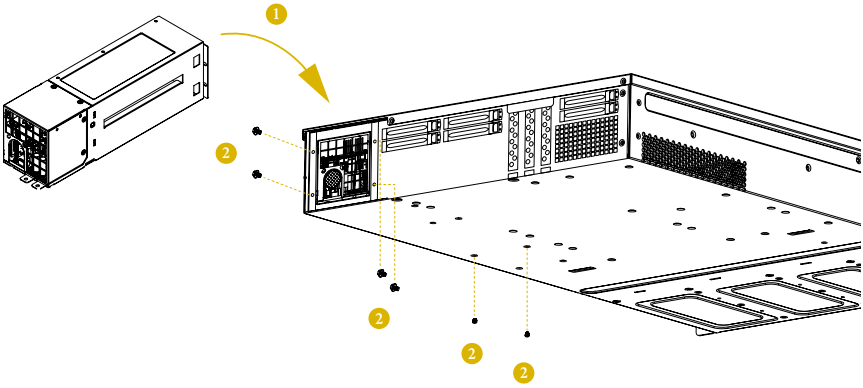


3.4 Power Supply

> *Before replacing the power supply, power off the server, unplug the power cord, and disconnect all wiring from the power supply.*

Replacing the Power Supply (Redundant)

1. Slide the PSU into the power supply module bay until it clicks into place.
2. Use six screws to fix whole PSU assembly on the chassis.



3.5 Backplanes

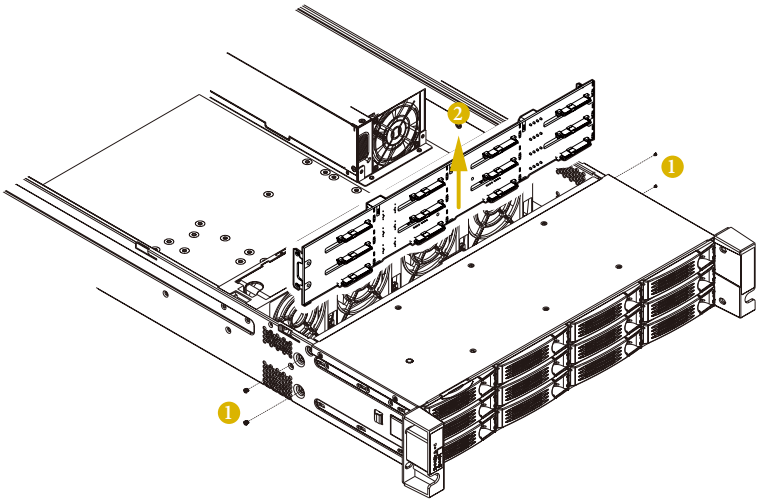
Each barebone system supports one 3.5-inch HDD backplane and two 2.5-inch HDD/SDD backplanes. The Hot-Swap SAS/SATA backplanes serve as the interface between the motherboard and the HDDs/SDDs.

Before removing and installing backplanes, power off the server and unplug the power cord.

For the specification of backplanes, please refer to the Chapter 4.

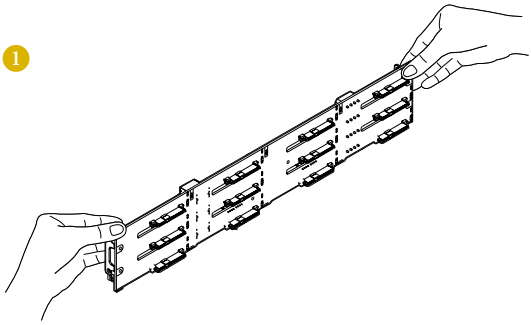
Removing the Backplane

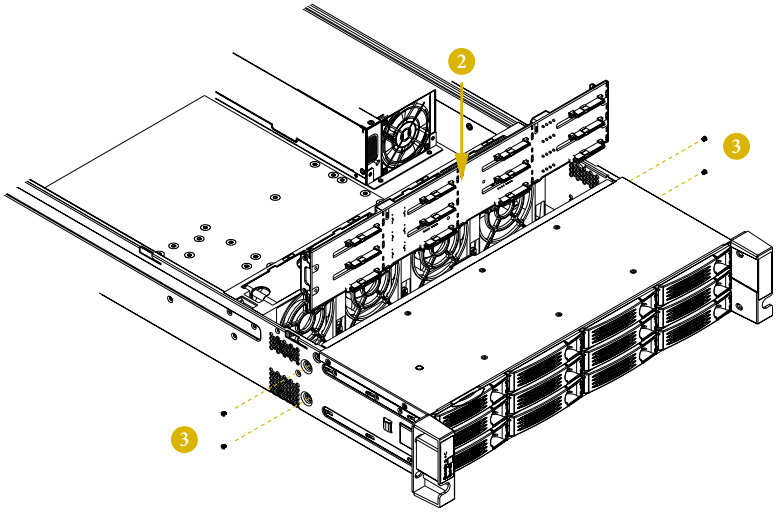
1. Loosen the securing screws on the backplane.
2. Lift the backplane up from the chassis.



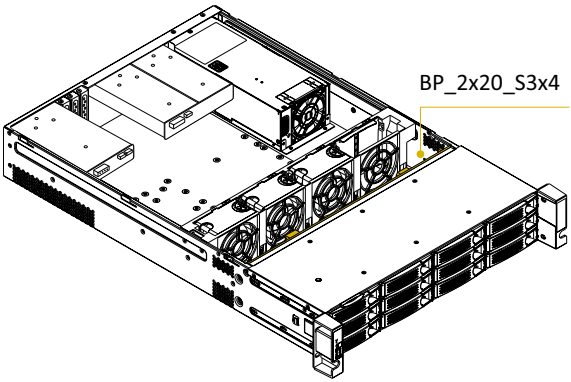
Installing the Backplane

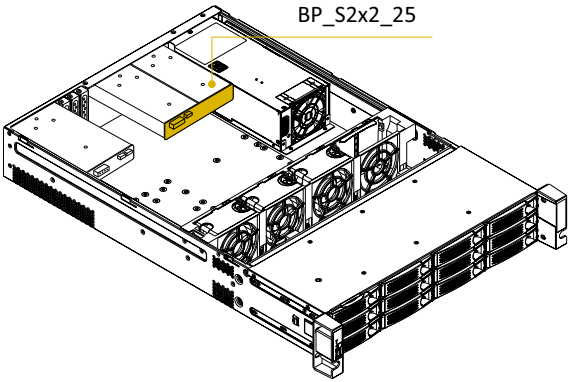
1. Hold the backplane only by the edges.
2. Position the backplane in the server system. Align mounting holes of backplane to the standoff on the chassis.
3. Secure the backplane with the four screw.

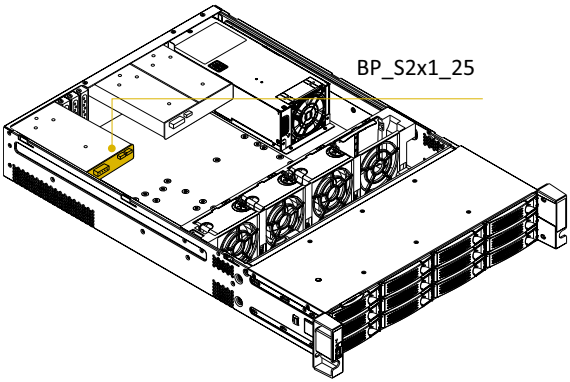




The following diagram shows the location of blackplanes on the server chassis.





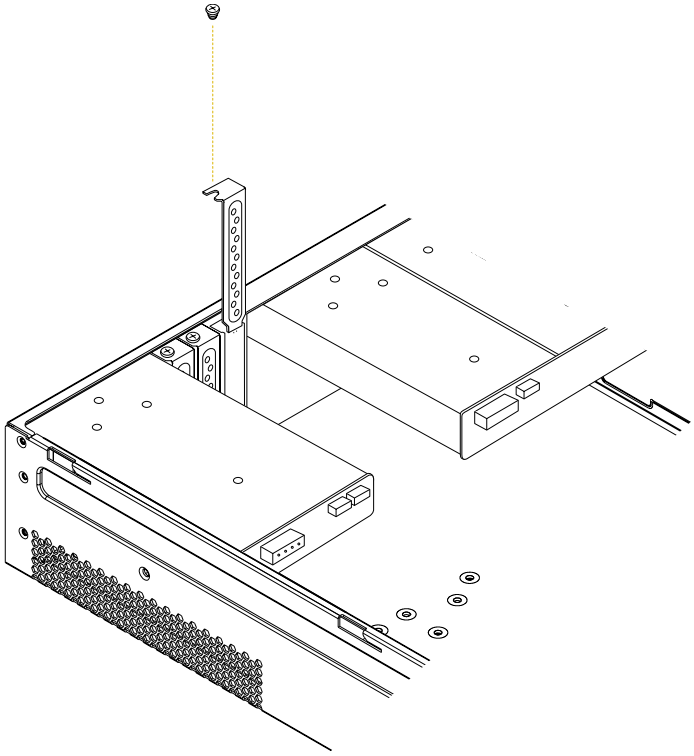


3.6 Add-on Card

Before installing the add-on card, power off the server and unplug the power cord.

Installing the Add-on Card in the Chassis

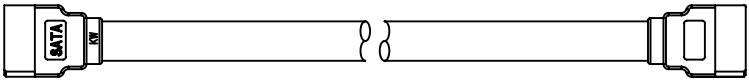
1. Remove the screw securing the cover in place for each low profile add-on slot you want to use. Keep this screw for later use.
2. Align the add-on card and insert into place.
3. Secure each card to the chassis using the screw previously removed.



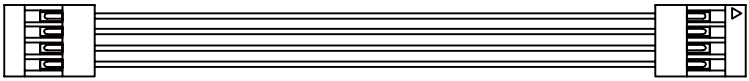
3.7 Chassis Cables

This section lists supported cables for your chassis system.

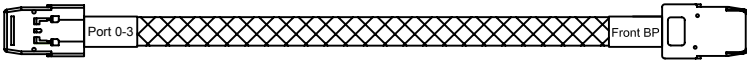
1. Single port SATA Cable (Quantity: 2)



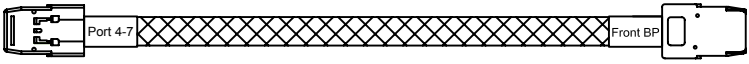
2. SGPIO Cable (Quantity: 1)



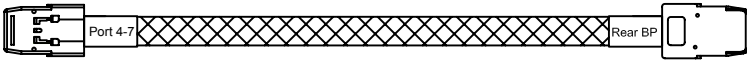
3. MiniSAS-1 Cable (670mm) (Quantity: 1)



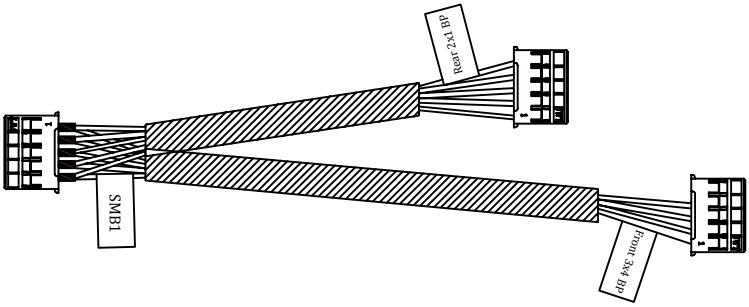
4. MiniSAS-2 Cable (670mm) (Quantity: 1)



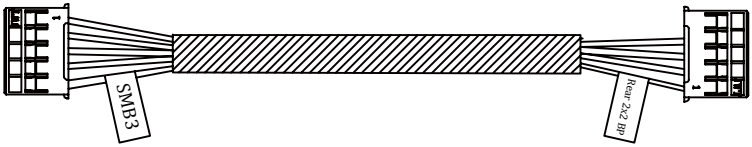
5. MiniSAS-1 Cable (970mm) (Quantity: 1)



6. MNG Cable (520mm+100mm)_SMB (Quantity: 1)



7. MNG Cable (960mm)_SMB (Quantity: 1)

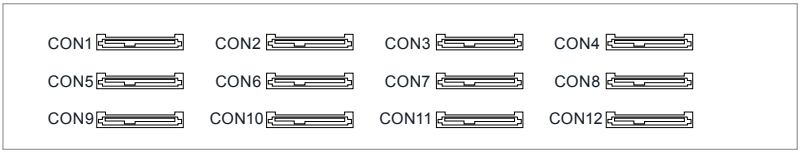


Chapter 4 Backplane Specifications

3.5-inch Hard Drive Backplane (to connect 12 HDDs)

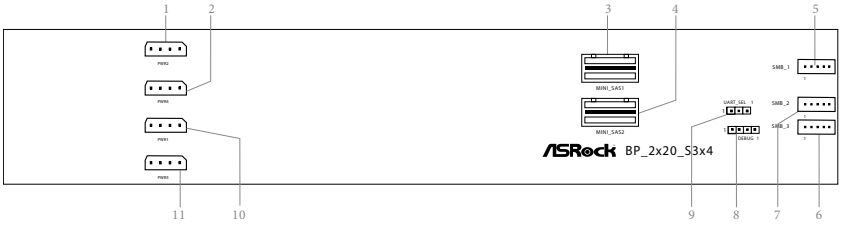
BP_2x20_S3x4

Front View



12 x SAS/SATA Hot-swap Connectors

Rear View

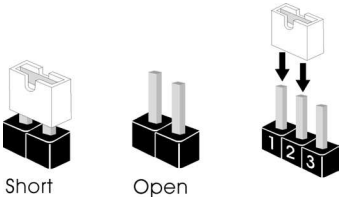


No.	Description
1	Power Connector (PWR2)
2	Power Connector (PWR4)
3	Mini-SAS Connector (MINI_SAS1)
4	Mini-SAS Connector (MINI_SAS2)
5	SMB Connector (SMB_1)
6	SMB Connector (SMB_3)
7	SMB Connector (SMB_2)
8	Debug Connector (DEBUG1)
9	UART Jumper (UART_SEL1)
10	Power Connector (PWR1)
11	Power Connector (PWR3)

English

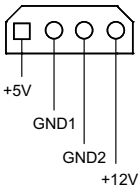
Jumper Setup

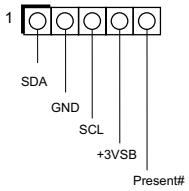
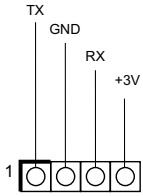
The illustration shows how jumpers are setup. When the jumper cap is placed on the pins, the jumper is "Short". If no jumper cap is placed on the pins, the jumper is "Open". The illustration shows a 3-pin jumper whose pin1 and pin2 are "Short" when a jumper cap is placed on these 2 pins.



#9 UART Jumper (UART_SEL1)	1-2: Configure the setting of Debug connector for updating firmware by SDB_TX/RX. 2-3 (Default): Configure the setting of Debug connector for updating debug console by UART.

Pin Definitions

#1, 2, 10, 11 Power Connector (PWR1) (PWR2) (PWR3) (PWR4)		The 4-pin connectors provide power to the backplane.
#3, 4 Mini-SAS Connector (MINI_SAS1) (MINI_SAS2)		This connector is used to connect RAID card or the mini-SAS port on the motherboard.

#5, 6, 7 SMB Connector (SMB_1) (SMB_2) (SMB_3)		The SMB (SubMiniature version B) connector provides a communication interface between the backplane and the motherboard.
#8 Debug Connector (DEBUG1)		The Debug Connector is used for the firmware upgrade and factory reset.

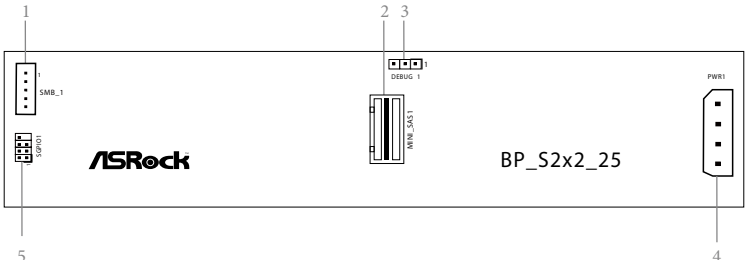
2.5-inch Hard Drive Backplane (to connect 4 HDDs)

BP_S2x2_25 (to connect 4 HDDs)

Front View

2 x SAS/SATA Hot-swap Connectors

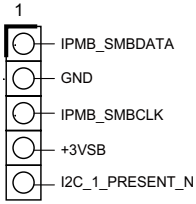
Rear View



No.	Description
1	Intelligent Platform Management Bus Header (SMB_1)
2	Mini-SAS Connector (MINI_SAS1)
3	Debug Connector (DEBUG1)
4	Power Connector (PWR1)
5	SGPIO Connector (SGPIO1)

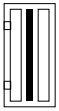
Pin Definitions

#1 Intelligent Platform Management Bus Header (SMB_1)



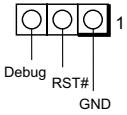
This 4-pin connector provides a communication interface between the backplane and the motherboard. It allows basic monitoring of voltages, fans, and temperature.

#2 Mini-SAS Connector (MINI_SAS1)



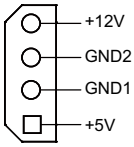
This connector is used to connect RAID card or the mini-SAS port on the motherboard.

#3 Debug Connector (DEBUG1)



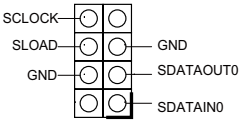
The Debug Connector is used for the firmware upgrade and factory reset.

#4 Power Connector (PWR1)



The 4-pin connectors provide power to the backplane.

#5 Serial General Purpose Input/Output Header (SGPIO_1)



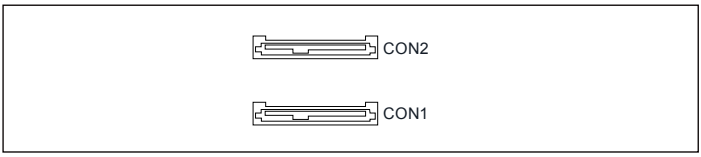
This header supports Serial Link interface for onboard SATA connections.

English

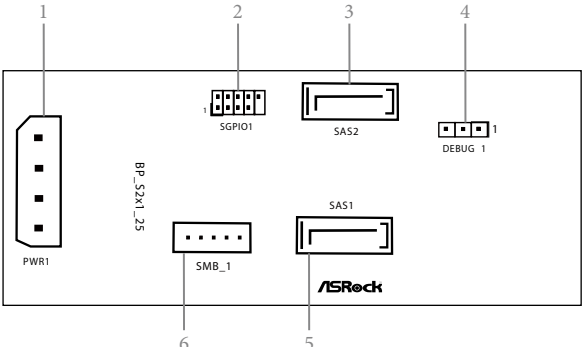
BP_S2x1_25 (to connect 2 SSDs)

Front View

2x SAS/SATA Hot-swap Connectors



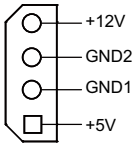
Rear View



No.	Description
1	Power Connector (PWR1)
2	SGPIO Connector (SGPIO1)
3	SAS Connector (SAS2)
4	Debug Connector (DEBUG1)
5	SAS Connector (SAS1)
6	Intelligent Platform Management Bus Header (SMB_1)

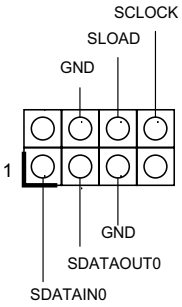
Pin Definitions

#1 Power Connector (PWR1)



The 4-pin connectors provide power to the back-plane.

#2 Serial General Purpose Input/Output Header (SGPIO_1)

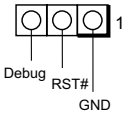


This header supports Serial Link interface for onboard SATA connections.

#3, 5 SAS Connectors (SAS1, SAS2)

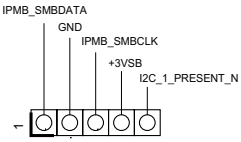
These two SAS connectors support SAS/SATA data cables for internal storage devices. The current SAS2/ SATA3 interface allows up to 6.0 Gb/s data transfer rate.

#4 Debug Connector (DEBUG1)



The Debug Connector is used for the firmware upgrade and factory reset.

English

#6 Intelligent Platform Management Bus Header (SMB_1)		This 4-pin connector provides a communication interface between the backplane and the motherboard. It allows basic monitoring of voltages, fans, and temperature.

Rear LED Indicators

SGPIO-SDATAOUT bit	MG9081 (SATA HDD)		
Description	Activity LED	Fail LED	Locate LED
Status	Green	Orange	Blue
Drive Not Present	Off	Off	Off
Drive Present, No Activity	On	Off	On
Drive Present, Activity	Blinking	Off	On
Locate (Identify)	Off	Blinking	On
Drive Fail	Off	Off	Off
Rebuild	Blinking	Blinking	On

Front LED Indicators

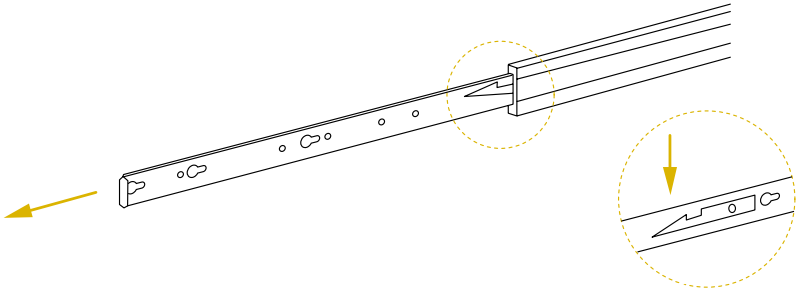
SGPIO-SDATAOUT bit	ASRock Rack BPB LED Behavior (SAS/SATA HDD)				
Description	Activity(Green)			Fail (Red)	Locate (Blue)
	Empty	Idle	Access		
Drive Not Present	Off	Off	Off	Off	Off
Drive Present, No Activity	Off	On	Off	Off	On
Drive Present, Activity	Off	Off	Blinking	Off	On
Locate (Identify)	Off	Off	Off	Blink	On
Drive Fail	Off	Off	Off	Off	Off
Rebuild	Off	Off	Blinking	Blinking	On
PFA (Predicted Failure Analysis)	Off	On	Off	Blinking	Off
Hotspare	Off	Off	Off	Off	Off
In A Critical Array	Off	On	Off	Blinking	Off
In A Failed Array	Off	On	Off	Blinking	Off
			Blink Freq 0.25 s	Blink Freq 0.5 s	

Appendix A Rails Installation

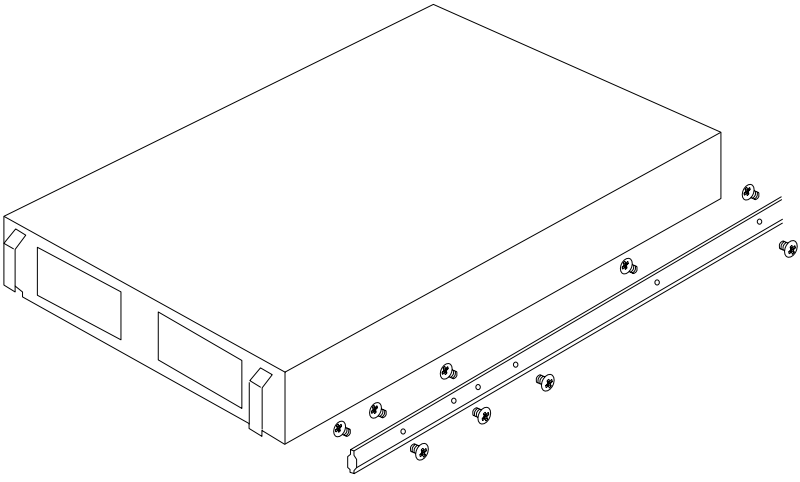
The rails installation instructions in this manual are example only, your actual rail assembly procedure may differ slightly .

Installing the Rails

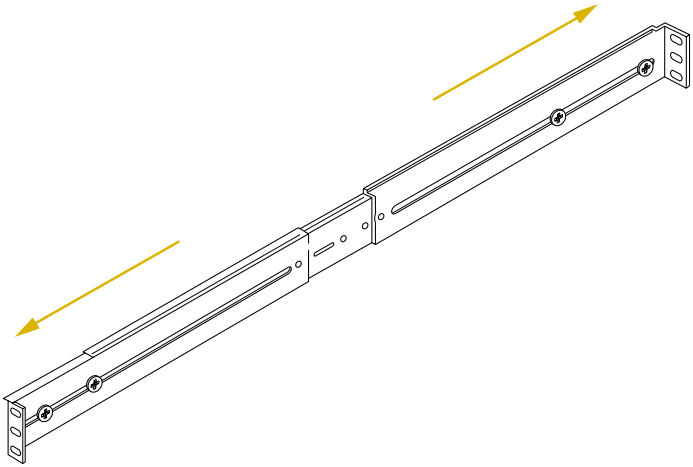
1. Pull out the inner rail from rail assembly by pulling the front activating release latch forward.



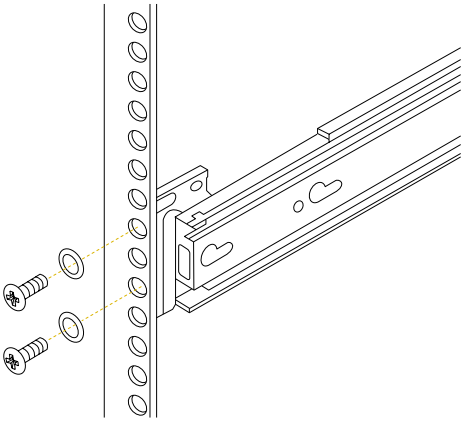
2. Secure the inner rails directly to the sides of the chassis using screws.



3. Each slide is pre-attached with front and rear adjustable EIA brackets.
   Loosen the nuts on the both brackets, and decide the proper setback distance to the opening, then tighten the nuts on the front brackets.



4. Extend the rear brackets to where it reaches the rear rack. Do not fully tighten rear bracket mounting screws until final adjustment is made.
   Repeat Step 3&4 above for other side of outer slide member.
5. Attach the L-shaped bracket to the front mounting flange using screws and nylon ring.
   Repeat Step 5 for the other side of slide.



Optional Slide Rail Kit

The optional slide rail kit is available for you to order, as listed below.

Optional Accessory – Slide Rail Kit	
Vendor	**Model name**
Chenbro	84H341300-002